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| **جامعة فيلادلفيا**  *cid:image001.png@01CFF76F.9CE975D0*  Philadelphia University | اسم النموذج: نموذج الامتحان  Paper Examination | QFO-AP-FI-015 |
| الجهة المصدرة: كلية تكنولوجيا المعلومات | رقم الاصدار : 2  Revision 2 |
| الجهة المدققة: عمادة ضمان الجودة | التاريخ :10/11/2018 |
| عدد صفحات النموذج: 1 |

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Programming Fundamental 2 (0750114) All Sections Mid Exam **Second Semester 2023-2024**

Date: April, 15, 2024 Time: 60 minutes

Information for Candidates

1. *This examination paper contains 5 questions, totaling 25 marks.*
2. *The marks for parts of questions are shown in round brackets.*

Advice to Candidates

*1. You should attempt all questions.*

*2. You should write your answers clearly.*

I. Basic Notions

*Objectives: The aim of the questions in this part is to evaluate the required minimal student knowledge and skills. Answers in the pass category represent the minimum acceptable standard.*

*Question1:* [4 Marks]

1. Write python statement to read an input integer number from the user

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1. Write python statement to create counter from 20 to 10 using a for loop

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1. Write a python statement to check if variable X is a positive number.

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1. Write **lambda function** to find the area of a triangle. Triangle area = (Base \*height) / 2

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*Question2:* [10 Marks]

Find the output of the following programs:

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|  | Code | Output |
|  | **def** fun():  sum = 0  **for** e **in** range(1, 7):  sum += e  print(sum)  fun() |  |
|  | **for** i **in** range(1, 7):  **if** i > 3:  **continue  elif** i == 6:  **break  else**:  print (i) |  |
|  | x = 3 y = 4 z = x + y print (x, y, z) x = y y = x print (x, y, z) |  |
|  | salary = 5000 **def** printSalary():  salary = 17000  print(**"Salary:"**, salary)  printSalary() print(**"Salary:"**, salary) |  |
|  | **def** function(z):  **while**(z >= 9):  print(z, sep = **"\*"**)  z -= 2  function(13) |  |

II. Familiar Problems Solving

*Objectives: The aim of the questions in this part is to evaluate that the student has some basic knowledge of the key aspects of the lecture material and can attempt to solve familiar problems.*

*Question3:* [4 Marks] (count the number of odd and even numbers entered by the user until they input 0 to stop)

Write a program that reads a sequence of numbers and counts how many numbers are even and how many are odd. The program terminates when zero is entered.

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*Question4:* [4 Marks]

Write a program (use function) that prompts the user to enter two inputs for a starting and ending number, then prints the series of numbers between them. If the starting number is less than the ending number, it prints the series in ascending order. Otherwise, it prints the series in descending order.

**Example:**

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| **Ascending order** | **descending order** |
| Enter the starting number: 1  Enter the ending number: 4  1 2 3 4 | Enter the starting number: 5  Enter the ending number: 2  5 4 3 2 |

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1. Unfamiliar Problems Solving

*Objectives. The aim of the questions in this part is to evaluate that the student can solve familiar problems with ease and can make progress towards the solution of unfamiliar problems, and can set out reasoning and explanation in a clear and coherent manner.*

*Question5:* [3Marks] **Power Calculation**

Write a **recursive function** to calculate the power of a number.

For example:

23 = 8

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| def power(base, exponent):  if exponent == 0:  return 1  else:  return base \* power(base, exponent - 1)  print("2 raised to the power of 3 is:", power(2, 3)) |